CLAIMS

1. A cold-cathode tube lighting device comprising:

a plurality of ballasts, at least one of said ballasts being connected to an electrode at one end of each of a plurality of cold-cathode tubes;

a first low-impedance power source having an output impedance lower than a combined impedance of said cold-cathode tubes, said first low-impedance power source being connected to the electrode at one end of each of said cold-cathode tubes via said ballasts;

a second low-impedance power source having an output impedance lower than the combined impedance of said cold-cathode tubes, said second low-impedance power source being connected to an electrode at the other end of each of said cold-cathode tubes; and

a phase correction circuit for adjusting a phase difference between an output from said first low-impedance power source and an output from said second low-impedance power source, so that electrode potentials at both ends of each of said cold-cathode tubes change in opposite phase with respect to each other.

2. The cold-cathode tube lighting device as claimed in claim 1,

wherein said first low-impedance power source, said second low-impedance power source, and said phase correction circuit are mounted on a first substrate, and

wherein said ballasts are mounted on a second substrate.

3. The cold-cathode tube lighting device as claimed in claim 2,

wherein one end of each of said cold-cathode tubes is connected

to said second substrate.

4. The cold-cathode tube lighting device as claimed in claim 1,

wherein said phase correction circuit comprises a delay circuit for delaying one of a fist pulse signal for instructing an output timing with respect to said first low-impedance power source a second pulse signal for instructing an output timing with respect to said second low-impedance power source, from the other signal by a constant quantity.

5. The cold-cathode tube lighting device as claimed in claim 1,

further comprising a detector for detecting current flowing through said cold-cathode tubes, or an electrode potential at one end of each of said cold-cathode tubes,

wherein said phase correction circuit changes the phase difference based on a detected value detected by said detector.

6. The cold-cathode tube lighting device as claimed in claim 1,

wherein each of said first low-impedance power source and said second low-impedance power source comprises a transformer connected to said ballast capacitors, and said transformer has an output impedance lower than the combined impedance of said plurality of cold-cathode tubes.

7. The cold-cathode tube lighting device as claimed in claim 6,

wherein said transformer comprises a core, a primary winding being wound around said core, and a secondary winding being wound around at least one of the inside and outside of said primary winding.

8. The cold-cathode tube lighting device as claimed in claim 7,

wherein said secondary winding has one configuration of a

sectional winding and a honeycomb winding.

9. The cold-cathode tube lighting device as claimed in claim 1, wherein each of said first low-impedance power source and said second low-impedance power source comprises a power transistor connected to said ballast capacitors.

10. The cold-cathode tube lighting device as claimed in claim 1, wherein each of said ballasts comprises an inductor.

11. The cold-cathode tube lighting device as claimed in claim 10, wherein said inductor has one configuration of a sectional winding and a honeycomb winding.

12. The cold-cathode tube lighting device as claimed in claim 11, wherein said inductor comprises a saturable reactor.

13. The cold-cathode tube lighting device as claimed in claim 1, wherein each of said ballasts comprises a capacitor.

14. The cold-cathode tube lighting device as claimed in claim 13, wherein said capacitor has an inter-layer capacity of a substrate.

15. The cold-cathode tube lighting device as claimed in claim 1, further comprising:

matching capacitors, at least one of said matching capacitors being connected across a ground potential and the electrode at one end of each cold-cathode tube connected to said ballast.

16. The cold-cathode tube lighting device as claimed in claim 15, wherein each of said matching capacitor has an inter-layer capacity of a substrate.

17. The cold-cathode tube lighting device as claimed in claim 15,

wherein an impedance of said ballast and an impedance of said matching capacitor are matched with each other.

18. The cold-cathode tube lighting device as claimed in claim 15,

wherein an impedance of said ballast, a combined impedance of said matching capacitor and a stray capacitance in the periphery of said cold-cathode tube, and an impedance of said cold-cathode tube during lighting are matched with each other.

19. A liquid crystal display comprising:

a plurality of cold-cathode tubes;

a liquid crystal panel installed on the front side of said cold-cathode tubes, said liquid crystal panel shielding light emitted from said cold-cathode tubes using a predetermined pattern; and

a cold-cathode tube lighting device,

wherein said cold-cathode tube lighting device comprises:

a plurality of ballasts, at least one of said ballasts being connected to an electrode at one end of each of said plurality of cold-cathode tubes;

a first low-impedance power source having an output impedance lower than a combined impedance of said cold-cathode tubes, said first low-impedance power source being connected to the electrode at one end of each of said cold-cathode tubes via said ballasts;

a second low-impedance power source having an output impedance lower than the combined impedance of said cold-cathode tubes, said second low-impedance power source being connected to an electrode at the other end of each of said cold-cathode tubes; and

a phase correction circuit for adjusting a phase difference between an output from said first low-impedance power source and an output from said second low-impedance power source, so that electrode potentials at both ends of each of said cold-cathode tubes change in opposite phase with respect to each other.